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Agricultural Engineering.

Agricultural Engineering curriculum offered at Illinois. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 158.

Agricultural Products.

How industry uses farm products. By Chaplin Tyler. Farm Machinery & Equipment. April, 15, 1934. p. 19-20. Chemists finding many new uses for farm products. Most natural way to promote farm prosperity.

Agriculture.

Cost of producing farm crops in eastern Canada. By E. S. Hopkins, J. M. Armstrong and H. D. Mitchell. 1934. 51p. Canada Department of Agriculture. Bulletin no. 168.

Crop insurance features of Agricultural Adjustment programs. 1934. 5p. Washington, D. C., Agricultural Adjustment Administration.

Farm practice and agricultural adjustment. By Henry A. Wallace. Farm and Ranch. v. 53, no. 7. April 1, 1934. p. 25-26.

First year of farm adjustment. Implement & Tractor Trade Journal. v. 48, no. 10. May 19, 1934. p. 13. Nearly three million reduction contracts are removing thirty-six million acres from production. AAA points to increases in agricultural income to prove value of program.

Forty-third annual report, fiscal year ending June 30, 1932 of the Agricultural Experiment Station of the Alabama Polytechnic Institute. 1934. 29p. Agricultural Engineering, p. 7-10.

Laws relating to the Department of Agriculture, 1933. State of Michigan. Lansing, Mich., 1934. 226p.

Pasture handbook. By A. T. Semple, H. N. Vinall, C. R. Enlow and T. E. Woodward. 1934. 89p. U.S. Department of Agriculture. Miscellaneous publication no. 194.

Simple methods for measurement and calculation of field areas. By J.W. Carpenter, Jr., and C. V. Phagan. 1934. 14p. Oklahoma Agricultural and Mechanical College. Extension Service. Circular no. 306.

Subsidizing the farmer. By C. S. Burton. Magazine of Wall Street. v. 54, no. 2. May 12, 1934. p. 78-79, 106. Price of wheat, corn, hog, cattle, tobacco and milk benefits is bureaucratic regimentation of agriculture.

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Agriculture. (Cont'd)

United States Department of Agriculture, its structure and functions. By M. S. Eisenhower and A. P. Chew. 1934. 177p. U. S. Department of Agriculture. Miscellaneous Publication no. 88.

Unused lands in Louisiana. 1934. 8p. Louisiana. Agricultural Experiment Station. Circular no. 6.

Air Conditioning.

Air conditioner for winter keeps room comfortable. Popular Mechanics. v. 61, no. 2. February, 1934. p. 217. Fitting inconspicuously under window, winter air conditioner keeps room comfortable in winter, and can also be used in summer by adding cooling and drying units. For winter months conditioner supplies fresh, warm, moist air, cleaned of impurities and circulated without draft and without allowing street noises to enter. Such unit can handle 16,800 cubic feet per hour. Cooling compressor, humidifier, filter and silencer all are contained in metal cabinet resembling radiator inclosure, which can be installed under window without any costly alterations.

Air conditioning. What is it? What are its fundamentals? By Andre Merle. Southern Power Journal. v. 52, no. 6. June, 1934. p.39-41.

Air conditioning and the steam heating contractor. By E. V. Hill. Aerologist. v. 10, no. 6. June, 1934. p. 13-15, 29.

Air conditioning of farm buildings. By Alfred J. Offner. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 159. Describes ventilating systems, with incidental air heating, as designed for set of farm buildings recently erected and now in use.

Domestic air conditioning. Aerologist. v. 10, no. 6. June, 1934. p. 11, 30. Interview with Dean A. C. Willard of the University of Illinois.

How accurate are humidity calculations? By N. R. Sparks. Heating and Ventilating. v. 31, no. 4. April, 1934. p. 13-15. In using charts giving air properties we commonly assume that they are accurate. As matter of fact they are not. Study reported here checks up to find amount and to isolate cause and judge seriousness of errors. Close agreement between calculated values in common use and those found directly by trial indicates that these errors are not serious in ordinary calculations in air conditioning. With small wet bulb depressions (high relative humidities) error is least and increases as depression becomes greater. Author points out that this may be due to assumptions in calculating which are not fully justified.

"Ifs" in air conditioning and mechanical refrigeration. By William Wren Hay. Magazine of Wall Street. v. 54, no. 1. April 28, 1934. p. 31-32, 54. Why the newest industry offers both opportunity and risk to inventor.

Air Conditioning. (Cont'd)

Quiet fans improve air conditioners. By P. E. Hochstetter. Aerologist. v. 10, no. 5. May, 1934. p. 20-22. Sources of noise may be classified in following three groups: 1. Motor noise, direct and transmitted to blades. 2. Noise from blade vibration caused by impact of air. 3. Air noise, that is, noise produced by air without vibration of any solid part.

Research sets new values for heat emission from human beings. Heating and Ventilating. v. 31, no. 5. May, 1934. p. 19. Recently completed research by Carnegie Institution of Washington.

Selective cooling for residences. By J. F. Lamb. Heating and Ventilating. v. 31, no. 5. May, 1934. p. 43-45.

Test house for air conditioning units. By Gordon Thompson. Heating and Ventilating. v. 31, no. 5. May, 1934. p. 15-18. Construction of houses. Air change. Sun load. House enclosure. "Weather" mechanism. Temperature measurements. Control equipment.

Alcohol.

Improvements in production of absolute alcohol. By H. Guinott. International Sugar Journal. v. 36, no. 421. January, 1934. p. 24-27.

Associations.

New 1934-35 A.S.A.E. Officers. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 176.

Sixty-fourth Annual Convention of American Society of Civil Engineers. Civil Engineering. v.4, no.6. June, 1934. p.315-320.

Building Construction.

Actual strength of steel I-beams. By Ewart S. Andrews. Structural Engineer. v. 12, no. 3. March, 1934. p. 118-129.

Brick dominates housing group at A Century of Progress. Brick & Clay Record. v. 84, no. 5. May, 1934. p. 164. Four brick houses at Fair. Newcomers are of more conventional design. To present one steel-brick house to cost $3,200.

Consider change in size of brick unit. Brick & Clay Record. v. 84, no. 5. May, 1934. p. 168, 185. Larger unit is desired.

Determining beam deflections by trigonometric series. By A. A. Jakkula. Engineering News-Record. v. 112, no. 21. May 24, 1934. p. 664-665.

Early brickwork in New England. By Frank Chouteau Brown. Pencil Points. v. 15, no. 4. April, 1934. p. 165-180.

How to estimate millwork. By F. W. DeBoice. American Lumberman. No.3021 May 12, 1934. p. 34-37. Running trim. Cold air intakes. Stairwork. Cabinet work.

Building Construction. (Cont'd)

How to estimate millwork. By F. W. DeBoice. American Lumberman. no. 3023. June 9, 1934. p. 33-35. Exterior millwork; outside screens; outside shutters.

Lightweight concrete construction. By J. Singleton-Green. Structural Engineer. v. 12, no. 4. April, 1934. p. 186-196.

Nails. By H. E. Hall. Pencil Points. v. 15, no. 4. April, 1934. p. 185-186. Attempt to show in brief way how to estimate quantity of nails required for certain work, and give general rule for use of nails.

New Federal financing to stimulate construction activity. Brick & Clay Record. v. 84, no. 5. May, 1934. p. 166-167. President proposes Government to insure private investments in building. Stegall bill provides $200,000,000 through Home Owners' Loan Corporation for modernizing.

Notched lumber is fastened without use of nails. Popular Mechanics. v. 61, no. 2. February, 1934. p. 175. Factory prepared lumber which comes to consumer with its integral parts so arranged that any type of building can be created by interlocking parts is now being turned out. No nails are required and rafters, studding and joints are notched at intervals so systematized that all parts can be dovetailed in place. All parts are seasoned and finished, and system of fastening members will not only help prevent settling of building, but will also stop cracking of plaster, it is claimed.

Reinforced brickwork. By H. Duff Williamson. 1934. 44p. Rensselaer Polytechnic Institute Engineering and Science series. Bulletin no. 46.

Stimulus to industry seen in housing plan. Electrical World. v. 103, no. 19. May 12, 1934. p. 702. President expected to submit $1,500,000,000 program to Congress. House repair, improvement and construction to receive government aid. As presently conceived program proposes: Modernization of existing houses that are worth cost. Stimulation of new home construction that can be justified. Demolition of obsolete construction by discouraging repair of such structures. Repair and replacement of industrial structures.

Chimneys.

How high, how wide, and how deep should we make the chimney? Domestic Engineering. v. 143, no. 5. May, 1934. p. 31-33. Table I.- Chimney sizes recommended for sectional cast iron boilers. Table II.- Chimney sizes recommended for steel firebox boilers.

Concrete.

Mechanical analysis of Portland cement by the hydrometer method. By Division of Tests, United States Bureau of Public Roads. Public Roads. v. 15, no. 3. May, 1934. p. 76-78.

Some new relations bearing on concrete mixtures. By Division of Management United States Bureau of Public Roads. Public Roads. v. 15, no. 3. May, 1934. p. 57-75.

Conservation.

Conservation of water resources urged by President. Engineering News-Record. v. 112, no. 23. June 7, 1934. p. 751. Congress asked President to provide it with information to guide it in framing legislation that will provide for maximum amount of flood control, navigation, irrigation and development of hydroelectric power, but in this first report on subject President stated that any attempt to meet requirement of Congress "automatically opens door to all inter-related subjects which come under general head of land and water use." This broader definition, said President, "brings to our attention very clearly such kindred problems as soil erosion, stream pollution, fire prevention, reforestation, afforestation, marginal lands, stranded communities, distribution of industries, education, highway building, home building, and a dozen others." President's message was accompanied by list of technical advisers who had served in compiling information, review of reports of technical subcommittees covering additions in arid sections, prepared by U. S. Bureau of Reclamation, and several reports of technical subcommittees covering various regions.

Cotton and Cotton Ginning.

Cotton comes under enforced control. By C. S. Burton. Magazine of Wall Street. v. 54, no. 1. April 28, 1934. p. 16-17, 55. Restriction of output by heavy taxation at the gin may temporarily raise price, but it will also raise foreign competition for our greatest export commodity.

Factors in good ginning. By Charles A. Bennett. v. 17, no. 12. May, 1934. p. 6-8.

Some mechanical elements involved in good ginning. By Charles A. Bennett. 1934. 16p. Mimeographed. U. S. Department of Agriculture. Bureau of Agricultural Engineering. Paper presented before Georgia Ginners' Association, Atlanta, Georgia. May 24, 1934.

Dairy Farm Equipment.

Sanitary care of milking machines. By J. L. Henderson, C. L. Roadhouse and A. Folger. Jersey Bulletin and Dairy World. v. 53, no. 19. May 9, 1934. p. 511-512, 526.

Dams.

Dams may be monuments. Idaho Farmer. v. 52, no. 6. March 22, 1934. p. 10. S. H. Chapman, watermaster of Big Wood Canal Company, declared that some of great irrigation works, and dams now being built in different parts of United States may endure for thousands of years as last reminders of our present civilization after it has faded away, as have civilizations of ancient countries on European and American continents, leaving their own large dams and irrigation works as most enduring evidence of kind of life once existent there.

Life of temporary dams. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 161. Check dams made from brush will last from two and a half to three years, say U.S.D.A. engineers. This is time enough for vegetation

Dams. (Cont'd)

to grow on silt accumulated in gullies and to prevent erosion of soil. Pole dams, which are more efficient in catching silt than brush dams, decay fairly rapidly but will last about a year longer than brush dams. After standing up for three years or more, pole dams will sometimes give way during series of heavy rains. Time seems to solidify rock dam construction by adding heavy blanket of silt and grass and similar debris. Rock dams last longer than any other type of temporary check dam. Woven wire dams are efficient and economical for depths of fill not exceeding three feet. They will last about three years, and, in that time, will catch substantial quantity of silt, leaves and branches.

Driers.

Driers improve quality. By F. L. Gerdes. Southern Agriculturist. v. 64, no. 5. May, 1934. p. 6.

Seed-cotton driers. By Charles A. Bennett. Southern Agriculturist. v. 64, no. 5. May, 1934. p. 6.

Earth Pressure.

Accuracy of Goldbeck cell in laboratory tests. By W. H. Seaquist. Engineering News-Record. v. 112, no. 23. June 7, 1934. p. 730-732. Familiar pressure cell as recently improved gives accurate results when subjected to precise laboratory testing methods.

Some soil pressure tests: Discussion. By R. L. Vaughn and M. Hirschthal. Proceedings of American Society of Civil Engineers. v. 60, no. 5. May, 1934. p. 712-718.

Electricity on the Farm.

Application of electricity to agriculture. By Sir William Ray. London. Farmers' Club. 1934. 63-80p.

Combined feed grinding and mixing unit. By Hobart Beresford and F.W. Atkinson. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 162-163, 166. Summary: Grinding and mixing of homegrown grain on farm is recognized as part of economical feeding program. Combination of feed grinding and mixing unit was installed in University of Idaho dairy barn as labor saving device. Hammer type mill, driven by electric motor, was used for grinding, elevating, and mixing feed. By adding auxiliary hopper with agitator to grinder, and making some other adjustments, grain or feed was elevated 23 feet through blower pipe to overhead bins without passing it through grinder. By alternately filling and discharging bins feed was thoroughly mixed after three transfers. Descriptive diagrams are presented and method of operation is discussed. Grinding and mixing processes were completed as separate operations for most efficient use of unit. Barley and oats were ground together at rate of 800 pounds per hour, with energy consumption of about 10 kwh per ton. With ration used, 1000 pounds of feed were mixed per hour by bin method with energy consumption of 4.5 kwh per ton. Bin method of feed mixing minimizes labor, requires very little attention, and can be done at chore time, thereby saving time during

middle of day. Extra cost for providing feed mixing unit is very small, provided adaptable grinding and storage equipment is available. It is also suggested that belt and bucket type of elevator can be adapted to bin method of feed mixing.

Cost of electricity. Progressive Farmer. v. 49, no. 4. April, 1934. p. 26. TVA's services 75¢ to $10 a month.

Electric insect traps compete with orchard spraying. By L. S. Caple. Electrical World. v. 103, no. 22. June 2, 1934. p. 799-802. Results of an experiment show greatest benefits for combination of traps and spraying.

Force-molting of hens and all-night lighting as factors in egg production. By D. F. King and G. A. Trollope. 1934. 7p. Alabama Agricultural Experiment Station. Circular no. 64.

Rural electrification in the South. By George M. Rommel Progressive Farmer. v. 49, no. 3. March, 1934. p. 7, 40.

Servants over the wires. By E. C. Easter. Progressive Farmer. v. 49, no. 3. March, 1934. p. 32. How electricity serves rural Alabama.

You can have electricity. By Dan Scoates. Progressive Farmer. v. 49, no. 4. April, 1934. p. 16. Home plants provide it successfully. Batteries for storage. Not battery plants.

Electric Service.

Reclosing fuses improve rural line service. By J.A. Potts. Electrical World. v. 103, no. 22. June 2, 1934. p. 788-789. Operating experience and tests on pioneering system demonstrates satisfactory performance to be obtained with fuse-reclosing assemblies.

When use is measured by comparable unit values. Electrical World. v.103, no. 21. May 26, 1934. p. 756-759. Analysis which shows customer-use factors for electrical energy by geographical regions and classes of consumers. Based on official U. S. Bureau of the Census figures, offers data on region and use - similar terms. Fundamental base for further studies by individual properties.

Electric Wiring.

Electrical wiring materials. American Architect. v. 143, no. 2620. November, 1933. p. 93-104.

Engineering.

Engineer as counsel for the people. By Arthur Huntington. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 155-158. Agriculture has not yet awakened to fact that her competitor is not foreign agriculture, but American manufacturer competing for privilege of purchasing our foreign exchange. We are, whether or not we accept the challenge,

charged with well-being of those who are engaged in and receive benefit of agriculture. We must not only know civic and economic value of projects which are part of our everyday development; we must know motive behind each of them. If we are honest as engineers and courageous as citizens, our profession will cease to be dragged into questionable projects and in few years our contribution to civic and economic world will compare favorable with our position in world of production.

Erosion Control.

Back to grass and forage. By J. F. Jardine. Extension Service Review. v. 5, no. 4. April, 1934. p. 49-50.

Control of soil erosion by terracing. By C. E. Ramser. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 164-166, 171. Terraces conserve soil; Economy to terrace land; Soil loss tremendous on slopes; Soil losses increase with grade; Superiority of variable graded terrace; Short terraces preferable; How spacing affects losses; Level terraces not generally satisfactory; Terracing steep slopes; Effect of amount of rain on crust formation; Effect of the amount of moisture in the crust when broken; Effect of rate of drying on crust formation; Effect of the chemical composition of soil on crust formation; Difference in breaking strength of crust on cotton beds and in middles on Cecil clay soil; Method of planting cotton to help plant break crust formed on soils. Factors affecting crust formation may be summarized in following manner: 1. Amount of crust formed on given soil varies with amount of rain. 2. Rate of drying affects breaking strength of crust. Slow rate of drying produces crust slightly harder to break. 3. Breaking strength of crust formed under given condition, was found to bear inverse relationship, within range studied, to amount of moisture in crust at time of breaking. 4. Chemical nature of soil affects breaking strength of crust. 5. Modulus of rupture of crust of soils studied is greater in cotton middles than on ridges.

Do you strip crop and terrace your land? By Hugh Hammond Bennett. Progressive Farmer. v. 49, no. 4. April, 1934. p. 12, 27.

Federal agencies for soil conservation. Extension Service Review. v. 5, no. 4. April, 1934. p. 61. Department of the Interior; Emergency Conservation work.

Grasses will hold soil. Washington Farmer. v. 69, no. 10. May 17, 1934. Vegetative control of erosion involves much planting.

Gullies controlled. Wisconsin Agriculturist and Farmer. v. 61, no. 9. May 12, 1934. p. 15.

Minutes of proceedings of the Institution of Civil Engineers. v. 235. London, 1934. 522p. Causes and prevention of bed erosion, with special reference to the protection of structures controlling rivers and canals, p. 175-278.

Record dust storm emphasizes soil erosion problem. Engineering News-Record. v. 112, no. 21. May 24, 1934. p. 680. Extending for distance of about 1,000 miles in north and south direction, and 1,500 miles from east to west, according to estimates.

Erosion Control. (Cont'd)

Soil erosion in El Dorado County. By J. H. Currie. Pacific Rural Press. v. 127, no. 18. May 5, 1934. p. 414.

Windgaps and watergaps in Pennsylvania. By Howard A. Meyerhoff and Elizabeth W. Olmsted. American Journal of Science. v. 27, no. 162. p. 410-416.

Extension.

Annual report of extension work in agriculture and home economics in Virginia, December 1, 1932 to November 30, 1933. 1934. 52p. Virginia Agricultural and Mechanical College. Bulletin no. 133. Agricultural Engineering, p. 39-43.

Farm Buildings and Equipment.

Makes good smokehouse. By Fred Hale. Farm and Ranch. v. 53, no. 6. March 15, 1934. p. 25. A-type house found to be satisfactory smokehouse. By using A-type house one can construct smokehouse with less cash outlay than is required for four-sided house. It is not necessary to have floor in this type of smokehouse. House can have any length desired. Height should be not less than 9 feet. House 8 feet by 8 feet by 9 feet is large enough to enable one to smoke hams, bacon and shoulders at one time.

Plans for machine shed with work shop. Wisconsin Agriculturist and Farmer. v. 61, no. 9. May 12, 1934. p. 14. Floor plan.

Rural work centers. 1934. 8p. Texas. Agricultural and Mechanical College. Extension Service. Circular no. 101.

Farm Machinery and Equipment.

Farm implement news buyer's guide, 1934. Chicago, Ill. 1934. 352p. Classified directory of manufacturers of farm and garden implements, tractors, wagons and carriages, motor trucks, lighting plants, cream separators, gasoline engines, wind mills, pumps, wire fencing and many accessory lines sold by implement dealers.

Farm tillage laboratory. Agricultural Bulletin. Spring issue. 1934. p. 23. On the grounds of Alabama Experiment Station at Auburn. Federal Bureau of Agricultural Engineering will construct nine shallow pits, each 250 feet long, 20 feet wide, and 2 feet deep. Into each pit will be dumped 10 carloads of top soil, sample of one of soils of Southeast, ranging from sand to tight clay. In these pits will be made practical tests to determine proper types of plows and cultivators for sections from which these soils came.

Longer life for machines. By Martin Chandler. New England Homestead. v. 107, no. 5. March 3, 1934. Checking depreciation with paint adds years of service to farm equipment.

More for farmers' dollars in new Massey-Harris lines. Implement & Tractor Trade Journal. v. 48, no. 11. June 2, 1934. p. 14-15, 18, 26. Company's engineers perfect machines which meet new demands from agriculture with increased capacity and performance.

Farm Machinery and Equipment. (Cont'd)

"New deal" for Massey-Harris dealers. Farm Implement News. v. 55, no. 12. June 7, 1934. p. 16-17, 20. Broad engineering and development program culminates with many new and improved machines of obvious merit.

New farm equipment. Farm Journal. v. 58, no. 6. June, 1934. p. 8. Tractors, corn planters, cultivators, nails, cream cans, porous irrigation hose.

Rubber-tired combine. Arizona Producer. v. 13, no. 6. June 1, 1934. p. 13. Arizona farmers try novel innovation. Saves time and power. Reduces breakage.

Those good old days - would you like to go back? Wisconsin Agriculturist and Farmer. v. 61, no. 8. April 28, 1934. p. 3. Discussion of methods of seeding.

Trash guide for plow used to fight corn borer. Popular Mechanics. v. 61, no. 2. February, 1934. p. 249. Funnel-shaped guide can cover virtually anything from heavy stand of sweet clover to hemp ten feet tall. Sides are pivoted to brackets clamped to plow with which it is used.

Wear of metals in agricultural machinery. By E. A. Silver. Engineering Experiment Station News. v. 6, no. 2. April, 1934. p. 19-20. As preliminary investigation on "The wear of metals in agricultural machinery," project is under way, Ohio Engineering Experiment Station cooperating with Department of Agricultural Engineering and Department of Agronomy, both of which are divisions of Ohio Agricultural Experiment Station. Series of service tests on plow shares is in progress. Wear resistance alloys are applied to cutting edges and points of plow shares; and these treated shares are run in competition with new, untreated shares, and with reworked shares resulting from usual smithing practices. Investigation involves test work in various types of soils under varying conditions, and has complexities encountered in problems of soil physics. Alloys used in preliminary studies are those advocated by some manufacturers and about which farmers are asking many questions. But it is evident that this work will lead quickly into other phases involving new developments of considerable importance in implement durability.

Fertilizers.

Auxiliary method of comparing values of similar compound fertilizers. By W. Gavin. Journal of Ministry of Agriculture. v. 40, no. 12. March, 1934. p. 1136-1138.

Changes in composition of American fertilizers, 1880-1932. By A. L. Mehring and A. J. Peterson. 1934. 20p. U. S. Department of Agriculture Circular no. 315.

Making fertilizer from activated sludge. By Harvey W. Hincks. American City. v. 49, no. 3. March, 1934. p. 45-48.

Sewage sludge as fertilizer. By Willem Rudolfs. 1934. 4p. New Jersey Agricultural Experiment Station. Extension Service. Extension Bulletin no. 125.

Fertilizers. (Cont'd)

Weed-killing fertilizer. By Robert E. Young. New England Homestead. v. 107, no. 5. March 3, 1934. p. 13. Massachusetts reports results of experimental work with weed control in asparagus.

Filters and Filtration.

Study of filtering materials for rapid sand filters. Part 2. By John R. Baylis. Water Works and Sewerage. v. 81, no. 5. May, 1934. p. 162-168. New method for determining effective size of sand.

Fire Protection.

Farm fire losses. Northwest Farm Equipment Journal. v. 48, no. 5. May, 1934. p. 15. Farm fire losses in 1933 are estimated at $100,000,000, and number of lives lost at 3,500. Property loss was $20,000,000 less than in preceding year, not so much because of less number of fires as by reason of lower replacement cost of property destroyed.

Safeguarding the farm against fire. New York, National board of fire underwriters. 32p.

Safeguarding the home against fire. New York National board of fire underwriters. 96p.

Safeguarding the nation against fire. New York National board of fire underwriters. 132p.

Underwriters' laboratories report on the comparative life, fire and explosion hazards of common refrigerants including ammonia, butane, carbon dioxide, dichlorethylene, dichlorodifluoromethane known as freon (Kinetic no. 12, also F-12), dichlorotetrafluoroethane (F-114), ethane, theyl bromide, ethyl chloride, methyn bromide, methyl chloride, methyl formate, methylene chloride, monofluorotrichloromethane (F-11), propane, sulphur dioxide and for comparative test purposes carbon tetrachloride and chloroform. By A. H. Nuckolls. Chicago, Ill., National board of fire underwriters, 1933. 118p. Miscellaneous hazard no. 2375.

Flood and Flood Control.

Reservoir as a flood-control structure. By George R. Clemens. Proceedings of American Society of Civil Engineers. v. 60, no. 5. May, 1934. p. 597-631. Paper presents in abbreviated form analysis of methods of obtaining flood control by means of reservoirs.

Floors.

Joist-plywood floor panel carries big load. Popular Mechanics. v. 61, no. 2. February, 1934. p. 201. Plywood sheets are glued to top and botton of joists in production of new type of floor panel which is said to speed up floor construction, save on materials and increase headroom in each story in which it is used. Top plywood, which is relatively thick, serves as subfloor, while thinner botton plywood forms ceiling for room below. For spans common in house construction, required strength and stiffness can be obtained with nominal six-inch joist, used with plywood, instead of usual ten-inch joist.

Flow of Water.

Study of the flow of water under works on sand foundations by means of models. By E. McKenzie Taylor and Harbans Lal Uppal. Lahore, 1934. 2 parts. Punjab Irrigation Research Institute.

Foundations.

Practical hints on foundation problems. By A. M. Bouillon. Military Engineer. v. 26, no. 147. May-June, 1934. p. 217-224. Preliminary investigations. Test ratings. Depth for test borings. Consideration of working conditions. Load tests. Selection of type of foundation. Studies before starting construction. Examples of failure. Effect of vibrations upon foundations. Causes of cracks. Preparing a foundation for new fills.

Frost Protection.

Simple method of protection against weather. Journal of Ministry of Agriculture. v. 40, no. 12. March, 1934. p. 1114-1115. Laborer takes large earthenware jar with tapering sides and flat base about 5 inches in diameter. This he lays on its side in middle of square and mounds up loose earth over base of jar into cone about 18 inches in diameter and 10 inches high, jar forming sort of cave on south side of mound. Laborer has also provided himself with leaves of large Aloe, of which hedges thereabouts are made - leaves about 15 inches long and 6 inches broad. One of these he fits over jar under lip of earth so as to form roof sustaining soil when jar is withdrawn. Thus he builds little cave facing south, roofed over at mouth by aloe leaf where soil is thin. Soil within shelter is then broken up, handful of well-rotted manure is worked in, and tomato seedling about 4 inches high is planted out of tin in which it has been raised. Cave forms trap for sun by day and maintains favorable atmosphere for growth; at same time mound protects plant from dreaded north wind and from occasional ground frosts.

Fuels.

Adopt tractor fuel specifications. National Petroleum News. v. 26, no.15. April 11, 1934. p. 20-A. Adopted by Western Petroleum Refiners Association. Specifications are: (minimum): flash 110 F., closed cup; 10% over at 347 F: 25% over at 392 F; 90% over at 465 F; Color, minus 16 or darker. Not intended to be rigid and official yardstick, but guide for refiners as well as for tax officials in other states who are contemplating introduction of tractor fuel specifications.

Fuel gas from cornstalks can be produced on farm. Popular Mechanics. v.61, no. 2. February, 1934. p. 175. Engineers at Iowa State college are attempting to provide farmer with free fuel gas by developing plant which will manufacture family's gas for heating and lighting from cornstalks and cesspool sewage from barn and house. Test plant has been erected which is expected to be capable of producing about 200 cubic feet of gas by utilizing 40 to 50 pounds of shredded stalks. It is estimated such a plant would cost farmer between $300 and $500, exclusive of distribution equipment within home.

Suitable Diesel fuel is refiners' problem in new automotive development. By Arch L. Foster. National Petroleum News. v. 26, no. 16. April 18, 1934. p. 24-31.

Fuels. (Cont'd)

Time factor in the determination of volatile matter in coke and coal. By Frederick W. Schwartz and Joseph L. Rosenholtz. 1934. p. 1-13. Rensselaer. Polytechnic Institute. Engineering and Science series. Bulletin no. 47.

Heating.

Development of unit heaters. By A. J. Brandecker. Aerologist. v. 10, no.6. June, 1934. p. 7-10, 30. Advantages: 1. Low first cost. 2. Lower operating cost. 3. Quicker warming up period. 4. Positive control. 5. Air movement. 6. Space saving.

Heat transfer from direct and extended surfaces with forced air circulation. By G. L. Tuve and C. A. McKeeman. Heating, Piping and Air Conditioning. v. 6, no. 6. June, 1934. p. 267-273.

Temperature control for home comfort. Domestic Engineering. v. 143, no.5. May, 1934. p. 85-87, 101. Excerpts taken from paper by Nelson B. Delavan and L. M. Persons presented at 11th annual American Oil Burner Association Convention in Philadelphia, 1934.

Hitches.

More horses per man. By I. W. Dickerson. Farmer and Farm, Stock and Home. v. 52, no. 6. p. 11. How to make big-team hitches.

Working five horses abreast. Farmer and Farm, Stock and Home. v. 52, no.8. April 14, 1934. p. 16.

Houses.

Another giant stirs. By Everett R. Smith. Printers' Ink. v. 166, no. 11. March 15, 1934. p. 25-26. Home equipment industry shows signs of awakening.

Better homes in America - small house competition. Architectural Forum. v. 60, no. 3. March, 1934. p. 169-184.

First glass house. Aerologist. v. 10, no. 6. June, 1934. p. 23. World's Fair in Chicago. Has steel frame which bears all loads. All exterior walls are of glass, opaque where desired, and without glare throughout. Floors are of concrete or rubber tile. All trim is metal, including door jambs and base. Doors are metal covered. So designed that it can be almost wholly pre-fabricated in factory.

Four room farm house. Montana Farmer. v. 21, no. 17. May 1, 1934. p. 10.

Houses of steel. By L. A. Nicholson. Country Gentleman. v. 103, no. 12. December, 1933. p. 16, 60.

Housing survey shows shortage results from doubling-up during depression. Engineering News-Record. v. 112, no. 20. May 17, 1934. p. 646. Information revealed in preliminary reports on real property survey now under way by Department of Commerce.

Houses. (Cont'd)

Low cost homes of brick and tile: Editorial. Brick & Clay Record. v. 84, no. 5. May, 1934. p. 165.

National housing act before Congress. American Lumberman. no. 3022. May 26, 1934. p. 18-19, 58.

New deal in farm homes. By Valvera Moore Hampton. American Lumberman. no. 3023. June 9, 1934. p. 28-29.

Opportunities for increased use of modern household conveniences shown. Domestic Commerce. v. 13, no. 13. May 30, 1934. p. 148. Reports now being issued on basis of Commerce Department's Real Property Inventory. Summary for Domestic Commerce of information from first 25 cities for which reports have been compiled, ranging in population from approximately 11,000 to 82,000, shows that proportion of all dwelling units having neither electricity nor gas for lighting ranged around 8.5 per cent, but in five of these cities more than 25 per cent of dwellings were still lighted by lamps or means other than electricity and gas. Plumbing facilities lacking.

Rural homes of city workers and the urban-rural migration. By Leland B. Tate. 1934. 53p. Cornell University. Agricultural Experiment Station. Bulletin no. 595.

Survey proves vast potential shortage in adequate housing facilities. Brick and Clay Record. v. 84, no. 5. May, 1934. p. 167.

To make our homes better. Farmer, and Farm, Stock and Home. v.52,no.8. p.20.

To revive home-building: Editorial. Engineering News-Record. v. 112, no.20. May 17, 1934. p. 645. To stimulate home-building, government guaranteed loans are to be made by private lending agencies at five per cent. Plan holds out certain bargain to prospective home builder, but it offers little incentive to central element of mechanism, loaning agency. And it overlooks entirely vital fact that home owning has largely become discredited; average citizen has been thoroughly disillusionized by recent experiences with destroyed property values, dead investments and foreclosure threats. Home ownership is not likely to become widely popular again until real-estate credit system is reclaimed from its medieval state. In present home-repair and building scheme, fallacy is added to failure of low-cost housing program. It is fallacy to predicate business revival plan on cooperation of some of very groups that successfully obstructed earlier housing plans; to depend on modernizing campaign based on emotional appeal; and to lure bankrupt home debtor deeper into debt. Instead of seeking to produce employment through home-building, national policies should seek to produce home-building through employment. True way to stimulate both repair and building of dwellings is to give average man fair and steady employment, and by modernizing realty practices to make home-owning profitable and satisfying.

Houses. (Cont'd)

Trend of progress in house design. American Architect. v. 143, no. 2618. July, 1933. p. 22-29. Demonstration houses of A Century of Progress reveal new methods of construction, new materials and new trends in design and decoration.

$2,000,000 lumber advertising program indicated. Printers' Ink. v. 166, no.5. February 1, 1934. p. 12. This is expected result of probable extension of Federal Home Loan fund into building and remodeling.

Houses, Remodeling.

Use reinforced face brick slabs to build model farm house. Brick & Clay Record. v. 84, no. 5. May, 1934. p. 160-163. Novel method of construction used in home at A Century of Progress. Walls are only 4 inches and 2 inches in thickness. Slabs made on site and raised by pole derrick.

Hydraulics.

Practical river laboratory hydraulics: Discussion. By J. B. Egiazaroff. Proceedings of American Society of Civil Engineers. v. 60, no. 5. May, 1934. p. 762-763.

Insect Control.

Mosquito control activities provide quick relief. By Thomas Rush. Municipal Sanitation. v. 5, no. 6. June, 1934. p. 197-198. Interesting and instructive example of simple and economical eradication of mosquitoes at resort in California.

Insulation.

Experiment in home insulation. By J. M. Weed. Engineering Experiment Station News. v. 6, no. 2. April, 1934. p. 16.

Insulating value of bright metallic surface. By F. B. Rowley. Heating, Piping and Air Conditioning. v. 6, no. 6. June, 1934. p. 263-266. Result of research conducted at University of Minnesota in cooperation with A.S.H.V.E. Research laboratory.

There's profit in selling insulation - for homes, farm buildings. American Lumberman. no. 3022. May 26, 1934. p. 22-23.

Irrigation.

Irrigating orchards in a dry season. By F. M. Coe and O. W. Israelson. Utah Farmer. v. 14, no. 20. p. 3, 10. Fundamental considerations. Use of water by trees. Spacing of irrigation furrows. Length of furrows and size of stream. Cover crops, cultivation and moisture conservation.

Irrigation for vegetable crops in Iowa. By A. T. Erwin and E.S. Haber. 1934. 115-143p. Iowa. Agricultural Experiment Station. Bulletin no. 308.

Irrigation in alternate furrows. By Colin A. Taylor. California Citrograph. v. 19, no. 5. March, 1934. p. 119. Four furrows would be made along each tree row, but only two would be irrigated at an irrigation. At next irriga-

tion remaining two furrows would receive water. Few growers tried out practice of irrigating in every other row, that is, in alternate middles. Under this practice trees received water on one side only at irrigation, and at next irrigation alternate side would be wet. To study effect of practices that resulted in irrigation of only limited portions of root zone, plots were laid out in spring of 1929 at San Dimas by division of irrigation of Bureau of Agricultural Engineering. Irrigation in alternate middles was given especial attention. Practical application of these findings suggests that during late fall, in winter, or early spring it may be considered safe practice to wet only limited portions of soil, as by irrigating in alternate furrows or in alternate middles. During summer, when transpiration rate is high, care should be taken to keep readily available moisture in all of root zone.

If alternate furrow or alternate middle system is continued throughout summer and water is available on demand, time between irrigations should be shortened for period from about middle of June to sometime in October, depending on season. Under fixed schedule, or rotation system of water delivery, it will be found best to irrigate as near 100% of soil as practical during summer period.

Irrigators find a thirsty soil. By Harry C. Colglazier. Kansas Farmer. v. 72, no. 9. May 5, 1934. p. 13. Soil is so dry it is like running water into mole hole.

Salt River project. By A. J. Lawson. Arizona Producer. v. 13, no. 5. May 15, 1934. p. 10. Manager of water users reports on power, irrigation outlook, and financial affairs.

Soil moisture control by irrigation. By R. A. Work. Oregon State Horticultural Society. Annual report. v. 25, 1933. p. 23-30.

Water rheostat permits irrigation flow. By H. J. Lawson. Electrical World. v. 103, no. 20. May 19, 1934. p. 719-720. Consists of 4-inch iron pipes about 6 feet long, hung on triangular wooden frame with pillar type insulators at corners of frame, pipes being pendent from these insulators. Rheostat was hung over tailrace and was supported by cable with rope block and tackle into power house so that raising or lowering rheostat could be accomplished with rise or fall of water level in tailrace. Electrodes of rheostat are spaced on 12-foot equilateral triangle. For rheostat to absorb 600 amp., approximately 8,000 volts are carried on 11,000-volt generator.

Land.

This "back-to-the-land" business. By Katherine Atherton Grimes. Southern Agriculturist. v. 64, no. 3. March, 1934. p. 11. To pick jobless population up in chunks and set it down in strange land to grub or starve is about as foolish plan as can be imagined.

Utilization of land taken out of cotton production. Agricultural Bulletin. Spring issue, 1934. p. 1-3. Letter from Regional Assistant, Replacement Crops Section, Division of Program Planning, A.A.A., is in response to recent conference, followed by correspondence with Dr. Campbell, and relates particularly to sections served by Atlanta and West Point Railroad, Western Railway of Alabama and Georgia Railroad.

Laundry.

Home laundry equipment. By Ann Jordan. Southern Agriculturist. v. 64, n no. 3. March, 1934. p. 13.

Lighting.

Light for sight, plant growth, and beauty. By Lawrence C. Porter. General Electric Review. v. 37, no. 5. May, 1934. v. 239-242.

Lumber.

How to buy farm lumber. Wisconsin Agriculturist and Farmer. v. 61, no. 8. April 28, 1934. p. 14. Under the lumber code, grade-marking and trade-making of lumber, will become an established practice April 1.

Miscellaneous.

American Society of Heating and Ventilating Engineers Guide, 1934. N.Y. 1934. 790p. Contains reference data on design and specification of heating and ventilating systems, together with manufacturers' catalog data section containing essential and reliable information concerning modern equipment.

Garden furniture to beautify the home grounds. By C. L. Berggren. 1934. 1p. University of Minnesota. Agricultural Engineering News Letter no. 26.

Motor truck transportation in western South Dakota. By Frank T. Hady. 1933. 38p. South Dakota. Agricultural Experiment Station. Circular no. 11.

Movement of population to and from New York State. By W. A. Anderson. 1934. 35p. Cornell University. Agricultural Experiment Station. Bulletin no. 591.

Proceedings of the forty-seventh annual convention of the Association of Land-grant Colleges and Universities held at Chicago, Illinois. November 13-15, 1933. 1934. 298p.

Rubber on the farm. By Captain H.H.B. Lund. Rural Electrification and Electro-Farming. v. 9, no. 107. April, 1934. p. 327-328. Rubber in one form or another is now in use in practically all industries and farming is no exception. Clothing, churn linings, tyres, tractors, etc.

Rural factory industries. By T. B. Manny and Wayne C. Nason. 1934. 35p. U.S. Department of Agriculture. Circular no. 312.

Unemployment relief census, October, 1933. United States summary showing by geographic divisions, by states, and by cities detailed data concerning color and size of relief families, and the age, color and sex of persons in relief families. Washington, United States Government printing office, 1934. 143p. Federal Emergency Relief Administration.

United States Bureau of Standards changes its name. Domestic Commerce. v. 13, no. 12. May 10, 1934. p. 135. Changing its name back to National Bureau of Standards, official name given it by Act of Congress on March 3, 1901.

Motors.

Electric motor handles overloads. By J. V. Hunt. Farm Journal. v. 58, no. 6. June, 1934. p. 13. Horsepower of motors; Thermal relay.

Motors and lines share home "weather" load problem. By F. E. Sanford and W. R. Weise. Electrical World. v. 103, no. 20. May 19, 1934. p. 717-719.

Tough little units that do big jobs. By George W. Kable. Electricity on the Farm. v. 7, no. 6. June, 1934. p. 7-8, 14, 18.

Painting.

There's hope for paint hogs. By Jane Stewart Davis. Successful Farming. v. 32, no. 6. June, 1934. p. 18, 56-57. Neglected surfaces that look like sponges are not hopeless.

Pipes and Piping.

Pipe standards, just approved, mark progress in technology. Industrial Standardization and Commercial Standards Monthly. v. 5, no. 5. May, 1934. p. 90-92. After seven years of work, Committee votes to adopt two as American Standards, and seven as tentative; work will continue. Standard specifications for welded and seamless steel pipe. Standard specifications for welded wrought-iron pipe. Tentative specifications for lap-welded and seamless steel pipe for high-temperature service. Tentative specifications for electric-fusion-welded steel pipe. Tentative specifications for electric-resistance-welded steel pipe. Tentative specifications for forge-welded steel pipe. Tentative specifications for lock-bar steel pipe. Tentative specifications for riveted steel and wrought-iron pipe. Tentative specifications for electric-fusion-welded steel pipe.

Poultry Houses and Equipment.

Cornell poultry range shelter. By L. M. Rochl and J. H. Bruckner. 1934. 10p. Cornell University. Extension Bulletin no. 280.

Equipment for laying house. By J. C. Taylor. New England Homestead. v.107, no. 5. March 3, 1934. p. 28.

Sanitary range shelter. 1934. 4p. Massachusetts State College. Extension Service. Extension leaflet no. 75.

Pumps and Pumping.

Pumps for farm water supply. By C. A. Cameron Brown. Oxford, University Press, 1934. 42p. Institute of research in agricultural engineering, University of Oxford.

Rain and Rainfall.

Checking up on Montana rainfall since 1895. Montana Farmer. v. 21, no. 17. May 1, 1934. p. 5. Chart shows precipitation departure from normal for state as a whole since 1895.

Rain and Rainfall. (Cont'd)

Influence of precipitation and grazing upon black grama grass range. By Enoch W. Nelson. 1934. 32p. U.S. Department of Agriculture. Technical Bulletin no. 409.

Methods and results of definite rain measurements. By Prof. Dr. H. Koschmieder. Monthly Weather Review. v. 62, no. 1. January, 1934. p. 5-7.

Rainfall studies for New York, N.Y.: Discussion. By H. Alden Foster, J.J. Slade, Jr., Charles W. Sherman, Merrill M. Bernard, Clifford Seaver and Jose Garcia Montes, Jr. Proceedings of American Society of Civil Engineers. v. 60, no. 5. May, 1934. p. 740-753.

Reclamation.

Reclamation works of Eastern Macedonia. By R. W. Gausmann. Military Engineer. v. 26, no. 147. May-June, 1934. p. 182-185.

Refrigeration.

Control of air conditions in refrigeration. By Bernard C. Oldham. Ice and Cold Storage. v. 37, no. 433. April, 1934. p. 59-60, 64.

Cooling cream. Dakota Farmer. v. 54, no. 9. April 28, 1934. p. 198. 1. Select and clean thoroughly 50-gallon hard wood barrel. 2. Bricks can be used as shown to raise top of can above water line. 3. Cleats and bar must be used to hold cans in place. 4. Barrel should be placed in shade, and may be placed in ground as shown in drawing. 5. Location should be such that water passes through cooling tank. 6. Cover must be securely fastened.

Dairy refrigeration on rural electric lines. By E. C. Easter and M.L. Nichols. 1934. 12p. Alabama. Agricultural Experiment Station. Bulletin no. 241.

First electric refrigerator gets place in museum. Popular Mechanics. v. 61, no. 2. February, 1934. p. 248-249. Placed in Smithsonian Institution, the United States national museum. Produced by Edmund J. Copeland, of Detroit, after four years of experimentation.

How to produce good cream. By V. C. Manhart. 1934. 4p. Purdue University Department of Agricultural Extension. Leaflet no. 191.

New method of load testing for domestic refrigerators. By H. A. Whitesel. Refrigerating Engineering. v. 27, no. 5. May, 1934. p. 240-247, 264.

Refrigeration - a necessity. By Mary Autrey. Progressive Farmer. v. 49, no. 5. May, 1934. p. 34. Refrigerator substitutes. Stroage capacity important. Kerosene refrigerator.

Rule for figuring cooling effect of extended surface. By Chester J. Scanlan. Heating and Ventilating. v. 31, no. 4. April, 1934. p. 26-29. After experiment and analysis author concludes that there is general rule, and that it can be easily applied. Rule states that for any given air velocity and refrigerant temperature capacity of extended surface cooler is proportional to heat content of entering air. Examples of application are given.

Thermodynamics of sulfur dioxide oil systems. By L. A. Philipp and R.E. Tiffany. Refrigerating Engineering. v. 27, no. 5. May, 1934. p. 248-254, 262, 264. Chief points discussed in this article are: 1. Effect of

Refrigeration.

lubricating oil upon chemical stability and cycle of operation of refrigerating system. 2. Mutual solubility relationship between liquid or gaseous sulfur dioxide and two different types of lubricating oil. 3. Factors for successful design of evaporating systems utilizing solubility relationship of lubricating oil, in luquid receiver and evaporator. 4. Chemical thermodynamics of stability of simple hydrocarbons and sulfur dioxide. 5. Method for successfully testing stability of sulfur dioxide and oil. 6. Method for cooling valve plates and head of larger are cooled compressors. 7. Effect of impurities like water, sulfur and oxygen upon stability of sulfur dioxide refrigerating systems.

Research.

Research notes. Ohio State's Engineering Experiment Station. Engineering News-Record. v. 112, no. 21. May 24, 1934. p. 666-668. Subsoils. Concrete research. Masonry studies. Tall building frames. Other investigations: 1. Floor-surface materials. 2. Azimuth determination. 3. Joints in water pipe. 4. Foundations for structures. 5. Friction of tires on road surfaces. 6. Fillers for brick pavements.

Retaining walls.

Retaining-wall design for fifteen-mile Falls dam. By Karl Terzaghi. Engineering News-Record. v. 112, no. 20. May 17, 1934. p. 632-636. Application of large retaining-wall tests and discussion of results in designing wall 900 feet long and 170 feet high separating concrete and embankment parts for large Connecticut River dam.

Roofs.

Crown of the house - its roof. By Joseph L. Ernst. American Home. v. 11, no. 3. February, 1934. p. 144-145, 162.

Run-off.

Graphs for run-off and pipe and gutter capacities. By Francis Head. Landscape Architecture. v. 24, no. 3. April, 1934. p. 143-146.

Rust.

Rust: logical means of combating it. By R. J. Knight. Refrigeration, Cold Storage and Air Conditioning. v. 4, no. 12. March 31, 1934. p. 21-22. Describes number of methods for combating rust, and their relation to electrolytic theory.

Screens and Screening.

Storm paper on screen door keeps out cold. Popular Mechanics. v. 61, no. 2. February, 1934. p. 175. Paper is water and wind proof, and exceptionally tough.

Soils.

Crop adjustment Oklahoma's opportunity for soil improvement. By L. W. Osborn. 1934. 38p. Oklahoma Agricultural and Mechanical College. Extension Service. Circular no. 307.

Soils. (Cont'd)

Soil crusts. By A. Carnes. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 167-169, 171. Methods of study, their strength, and method of overcoming their injury to cotton stand. Factors affecting crust formation may be summarized in following manner: 1. Amount of crust formed on given soil varies with amount of rain. 2. Rate of drying affects breaking strength of crust. Slow rate of drying produces crust slightly harder to break. 3. Breaking strength of crust, formed under given condition, was found to bear inverse relationship, within range studied, to amount of moisture in crust at time of breaking. 4. Chemical nature of soil affects breaking strength of crust. 5. Modulus of rupture of crust of soils studied is greater in cotton middles than on ridges.

Stabilized soil-bound road surfaces. 1 - Theory of soil stabilization. By W. R. Collings and L. C. Stewart. Engineering News-Record. Vol. 112, no.21. May 24, 1934. p. 660-664. Basic soil properties chiefly influential in designing stable mixtures and their determination by laboratory methods, with a consideration of calcium chloride as a moisture-fixing element.

Surface of the earth as a material by construction. By H. H. Leys. Structural Engineer. v. 12, no. 4. April, 1934. p. 198-211.

Stream Flow.

Approach to determinate stream flow: Discussion. By W. W. Horner. Proceedings of American Society of Civil Engineers. v. 60, no. 5. May, 1934. p. 764-765.

Stream flow records for the four years October 1, 1928 to September 30, 1932. 1934. 408p. Pennsylvania. Department of forests and waters. Water resources service.

Subsistence Homesteads.

Subsistence homesteads and land utilization. Extension Service Review. v. 5, no. 4. April, 1934. p. 50.

Subsistence homesteads projects. American City. v. 49, no. 2. February, 1934. p. 75-77. Five major classes of projects: 1. Workers' garden homesteads near small industrial centers to which there is like to be further decentralization. 2. Workers' garden homesteads near large industrial centers not likely to decentralize. 3. Rehabilitation of "stranded" industrial groups, particularly bituminous coal miners. 4. Reorganization of disorganized rural communities and elimination of rural slums. 5. Moving population from dry-farming lands in the West to unoccupied farms on Federal reclamation projects. Up to January 20, 1934, subsistence homestead projects were under wayn or had been approved by Director Wilson in Dayton, Ohio, Decatur, Indiana, Reedsville and Tygart River Valley, near Elkins, West Virginia, Monmouth County, New Jersey, Youngstown, Ohio, Mount Pleasant Township, Pennsylvania, Birmingham, Alabama, five Mississippi cities - Meridian, Hattiesburg, Laurel, McComb, and Tupelo, and in Pender County, North Carolina.

Surveying.

First-order triangulation in Kansas (1927 datum) By O. P. Sutherland. 1934. 73p. U. S. Coast and Geodetic Survey. Special publication no. 179.

Tennessee Valley Authority.

Happy hunting ground. By T. H. Alexander. Country Gentleman. v. 103, no. 12. December, 1933. p. 14-15, 52. Roosevelt's New Deal for Tennessee Valley.

Human problem of the Tennessee Valley authority. By Arthur E. Morgan. Landscape Architecture. v. 24, no. 3. April, 1934. p. 119-125.

TVA Experiment: Editorial. Engineering News-Record. v. 112, no. 22. May 31, 1934. p. 718-719. Letter reflects conservatism that has dominated actions of three members of Authority in directing operations that could have been made anything but conservative under very broad powers given to them. This is especially true with respect to building up market for power. TVA did not set uneconomically low power rate, as it might have done in order to enter into destructive competition with privately owned utilities of region; instead it set rates that it thinks it can justify on sound accounting basis. Authority is cooperating with existing electric utilities in building up newpower demands in order that there may be market for current developed by both private companies and TVA. Morgan is advocate of decentralization of industry, which implies small units, while David E. Lilienthal, director having power question as his chief concern, is believed to favor bringing in industries with large demand for power as essential to building up load that will make TVA's power cheap.

Terracing.

New type of terracing checks erosion better. Science News Letter. v. 25, no. 679. April 14, 1934. p. 233. Described by Prof. F.L. Duley, of Kansas State Agricultural College. In test of area terraced in usual way, with channel on uphill side of terrace, it was found that run-off of water and soil losses through erosion were actually greater than they were on unterraced lands of same slope. But when channel was cut on downhill side of terrace, both run-off and erosional wastage were materially reduced.

Terracing - a problem of land utilization. Extension Service Review. v. 5, no. 4. April, 1934. p. 57-58.

Terracing in Texas last year. Farm and Ranch. v. 53, no. 6. March 15, 1934. p. 11. 1933 reports of Extension Service disclosed that 15,465 individual farms had had some terracing done on them last year in 173 counties reporting. Texas now has 6,895,548 acres of land protected from erosion by terraces. Valuation placed on terraces made last year is $1,814,582.

Water hose level for terracing. Southern Agriculturist. v. 64, no. 3. March, 1934. p. 25. Material necessary for making water hose level consists of 2 pieces of poplar or pine, poplar preferred, 1 inch by 2 inches by 4 feet; one piece curb air hose 5/8ths inch in diameter outside and 25 feet long; two steam gauge glasses 5/8ths inch in diameter and 16 inches long; two pieces of gum rubber tubing 1/2 inch in diameter and 4 inches long; four strips friction tape 1 inch wide and 15 inches long; two hose slips No. 2 in size, and two small screw eyes. Groove 1/2 inch deep, 3/4 inch wide and 18 inches long is chiseled out in one end of each of four feet sticks. Sticks are dressed and sandpapered and then are given two coats of dark-colored paint. Beginning at point 15 inches down from top of each stick inches and half inches are marked off along side of grooves.

Terracing. (Cont'd)

Marks should be made in proper contrasting color. Three inches below lower end of groove screw eyes are fastened in. Clip is slipped on each end of 25-foot length of hose about 4 inches from end. Each end of hose is soaped and short rubber tube is slipped on for about two inches. Glass tubes are slipped into other ends of tubing. Glass tubesare slipped into other ends of tubing. Glass tubes are placed in grooves in top of two 4-foot sticks, placing tops of tubes even with tops of sticks. Strip of tape is wrapped around lower end of each of glass tubes to secure these in groove. Tubes are wrapped in same way at top of tubes. Clip on hose is adjusted to screw eye and clip bolt is secured through eye. Level is filled with water when it is to be used.

Tires.

Advantages of rubber tires. Farm and Ranch. v. 53, no. 7. April 1, 1934. p. 27. Tractor tests by University of Nebraska. Following conclusions resulted from various tests: 1. For any given engine horse power greater drawbar horse power was obtained with rubber tires than with steel wheels and lugs. 2. With rubber tires, maximum drawbar pulls in low, second, and high gear are nearly same. 3. Steel wheels and lugs had advantage in both drawbar pull and speed in low and second gear. Rubber tires had considerable advantage in drawbar pull with maximum pull of 2190 pounds in high gear. 4. Maximum drawbar pull for rubber tires was 2230 pounds in second gear. For steel wheels and lugs it was 3200 pounds in low gear. 5. Rubber equipment showed better fuel economy based on drawbar horse power. High gear with rubber showed maximum fuel economy. 6. Maximum drawbar horse power developed with rubber tires was in high gear. Maximum with steel wheels was in low gear. 7. Direction to best fuel economy with rubber tires is higher speeds with drawbar pull remaining nearly constant. Most efficient drawbar load in this test was near 1,800 pounds. 8. Rubber tires equipped with lug type chains will pull as much as steel wheels and lugs on dry soil, and more in muddy conditions.

Air tires for tractors. By F. Hal Higgins. California Cultivator. v. 81, no. 9. April 28, 1934. p. 222.

New way farming with air tires. By F.W. Fox. Hardware and Implement Journal. v. 39, no. 5. May, 1934. p. 13-17.

Rubber fast winning farm favor. Implement & Tractor Trade Hournal. v. 48, no. 10. May 19, 1934. p. 11, 13. More than hundred tractors go into one territory on new type of wheels. Many advantages are cited for use in small grain and hay harvests.

Rubber tires on agricultural machinery. By E. A. Silver and G. W. McCuen. Engineering Experiment News. v. 6, no. 2. April, 1934. p. 20-22.

Tractor owners O.K. rubber tires. Farm Machinery and Equipment. April, 1934. p. 10-12. Field tests under actual farming conditions prove efficiency of rubber equipment.

Tractors.

Diesel tractors give high fuel economy. By Ralph J. Morgan. Public Works. v. 65, no. 2. February, 1934. p. 28. Operating records on several classes of Public Works construction.

Full speed ahead. By Wheeler McMillen. Country Home. v. 58, no. 6. June, 1934. p. 16-17, 47, 51-53. Discussion of tractors.

Tractors. (Cont'd)

Keep tractor pulling its optimum load. By A. J. Schwantes. Agricultural Engineering. v. 15, no. 5. May, 1934. p. 170-171. Table I. Average cost per hour of tractor operation. Table II. Relation between cost per unit of drawbar work and power output of tractor.

Ventilation.

Ventilation of poultry houses. By E. R. Gross. 1934. 4p. New Jersey Agricultural Experiment Station. Circular no. 306.

Water Heating.

Heating water without fire. By T. E. Hienton. Electricity on the Farm. v. 7, no. 6. June, 1934. p. 4-6. Description of various types. Advantages and disadvantages of nonpressure heaters.

Hot-water system operated on gas burners. Popular Mechanics. v. 61, no. 2. February, 1934. p. 276. Replacing furnace in hot-water heating system, number of gas-fired water heaters, connected to system in parallel, have been found practical and, according to owner, also economical, as only one or two burners are used during mild weather, and extra burners can be lighted as weather becomes colder. Number of burners needed depends, of course, on number of radiators, their size, amount of space to be heated, type of building, and severity of weather. Roughly it has been found that one heater is needed for each radiator of average size.

Sell water heating with close estimates. By B. L. Mathews. Domestic Engineering. v. 143, no. 5. May, 1934. p. 37-39.

Water Measurement.

Measuring Ohio's rivers. By Lasley Lee. Engineering Experiment Station News. v. 6, no. 2. April, 1934. p. 13-15. Present low level of streams indicate danger of drought.

Water Supply.

Growers fit plans to supply of water. Idaho Farmer. v. 52, no. 7. April 5, 1934. p. 16. 1. Seeding speeded up to take advantage of early season. 2. Seeding crops which are quick maturing. 3. Using water more efficiently.

How is your water supply? By I. W. Dickerson. Farmer and Farm, Stock and Home. v. 52, no. 8. April 14, 1934. p. 16. Fixing up the old well.

Interior water supply piping for residential building. By Francis M. Dawson and James S. Bowman. 1933. 54p. Wisconsin. Engineering Experiment Station. Bulletin no.77.

Surface water supply of New Mexico for the years 1930 and 1931. Santa Fe, New Mexico, State Engineer. 251 p.

Water supply inadequate in farm homes. Farm and Ranch. v. 53, no. 7. April 1, 1934. p. 22. Most pressing need of farm homes in Texas, according to finding of rural housing survey recently conducted in State as CWA project, supervised by Extension Service.

Water System.

Dependable water system. By H.H. Hoke. Montana Farmer. v. 21, no. 17. May 1, 1934. p. 3